आज़ादी का अमृत महोत्सव

सत्यमेव जयते
Govt. of India
Ministry of labour & Employment

INDUSTRIAL SAFETY AND HEALTH

A Booklet on

Construction Safety for Workers



कारखाना सलाह सेवा एवं श्रम संस्थान महानिदेशालय, केंद्रीय श्रम संस्थान
Directorate General Factory Advice Service & Labour Institutes
श्रम एवं रोज़गार मंत्रालय, भारत सरकार
Ministry of Labour & Employment, Government of India
सायन, मुंबई 400 022, भारत
Sion, Mumbai 400 022, India
Website: www.dgfasli.gov.in

Table of Contents

Chapter	Title	Page No.
1	Good Housekeeping	1
2	Work at Height	2
3	Scaffolding and Ladders	4
4	Lifting Equipment and Accessories	8
5	Excavations and Underground Works	10
6	Electrical Safety	12
7	Hand and Power Tools	13
8	Working Above and Under Water	14
9	Working With Compressed Gas Cylinders	16
10	Use of Explosives	18
11	Fire Prevention and Control	19
12	Demolition	20
13	Personal Protective Equipment	21
14	Chemical Safety	25
15	Emergency Action Plan	26
16	First Aid	27
17	Occupational Health	29

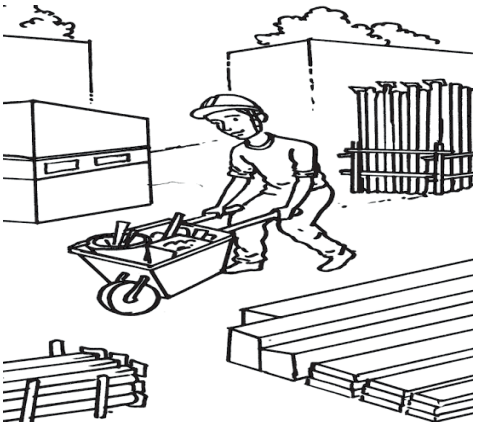
Chapter 1

GOOD HOUSEKEEPING

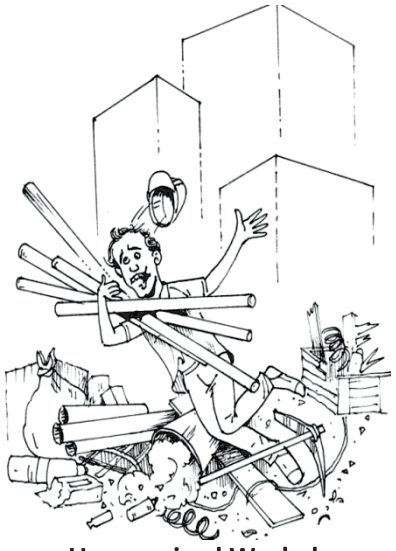
On construction sites, good housekeeping refers to the practice of keeping your site clean andin orderly manner. An organized work area reduces the risk of accidents and increases fire safety.

If you don't have materials, waste and discarded tools/ materials lying around the place, there are fewer chance for tripping of workers. If you stop rubbish from piling up, clearer escape routes will be available, to get out safely in any emergency.

Good housekeeping improves safety, because when a site is organized and everyone knows where things are, they spend less time looking for things, and more time getting on with things! Remember the golden rule**- 'If in doubt, take it out'.**



A well organized work site reduces accidents



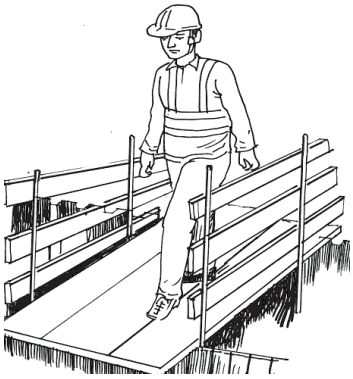
Unorganized Workplace

Sr. no	Do's	Don't s
1.	Keep area clean	Don't keep unwanted material
2.	Always use right tools for the work	Don't use damage tools
3.	Keep the materials in right place	Don't let the debris pile up
4.	Stack and store materials safely.	Don't store material up to high height
5.	Keep access routes clear	Don't keep materials in the path of movement of vehicles and people
6.	Always keep minimum material and tools on scaffold or work platforms	Don't over load a scaffold of work platform

Chapter 2

WORK AT HEIGHT

At construction sites major work is carried out by working at height and therefore the major hazard in the construction siteis falling from height. Hence safety measures are required to be taken.

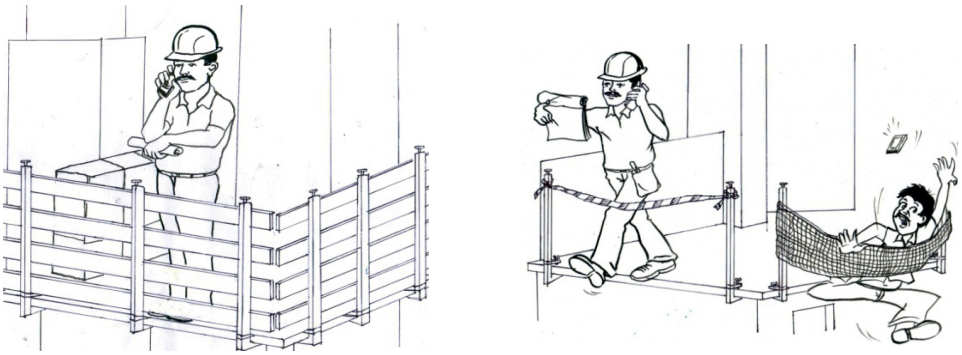


Guard Rails Installed



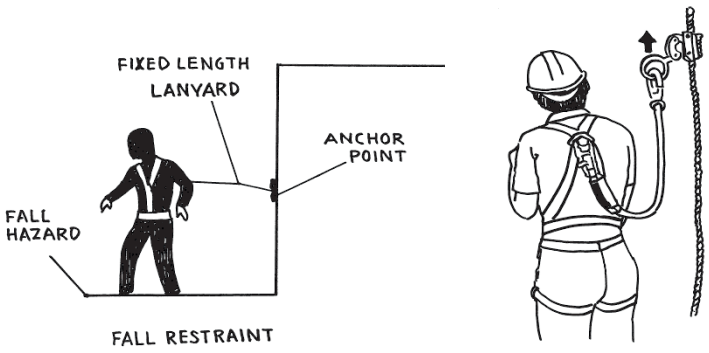
Don’t work on unguarded Platforms

Sl. No	Do’s	Don'ts
1	Carry out as much work as possible on the ground	Don’t work at height without work permit
2	Ensure that you have safe access and egress to your workplace	Don’t climb the scaffold by using the cross braces and other members of scaffold
3	Ensure that your work platform is suitable, stable and strong enough for the work	Don’t use your work platform if it is unstable. Don’t overload your scaffold
4	Ensure that your scaffold is maintained and checked regularly	Don’t use the damaged scaffold
5	Take precautions when working on or near fragile surfaces specially roofs	Don’t step on the roofs without proper protection
6	Always see that protection such as barriers, barricades, guard rails, mid rails, toe boards are in place.	Don’t work without the barricades , guardrails, mid rails, toe boards in place
7	Always ensure that Safety Nets are installed to provide collective protection	Don’t work without safety nets
8	Do have your “Height Pass” training cleared to avoid problems when working at height.	Don’t work at height without undergoing your training and obtaining ‘height pass’
9	Always wear your safety harness and anchor it at the anchorage point.	Don’t avoid anchoring your safety belt harness to appropriate anchorage point
10	Do consider other workers working above, below you, and beside you on the scaffold.	Don’t walk on scaffold covered mud, or excess water.



Ensure Barricades and Guards at Openings

11	Do inspect the scaffold for damage and wear, missing clamps, braces, etc.	Don't overreach outside the guardrails and stand on ties, guardrails, or extensions
12	Before getting on a scaffold check to make sure that a competent person has inspected the scaffold and that it is safe to use.	Don't remove warning signs from scaffolds unless the work is completed
13	Do always wear full body protection to avoid accidents	Don't compromise with your PPE
14	While using personal fall arrest systems, thoroughly inspect the equipment for damage and wear.	Don't use damaged Personal Fall Arrester System(PFAS)
15	Do inspect the scaffold for damage and wear, missing clamps, braces, etc.	Don't overreach outside the guardrails



Fall Restraint and Personal Fall Arrestor System

Chapter 3

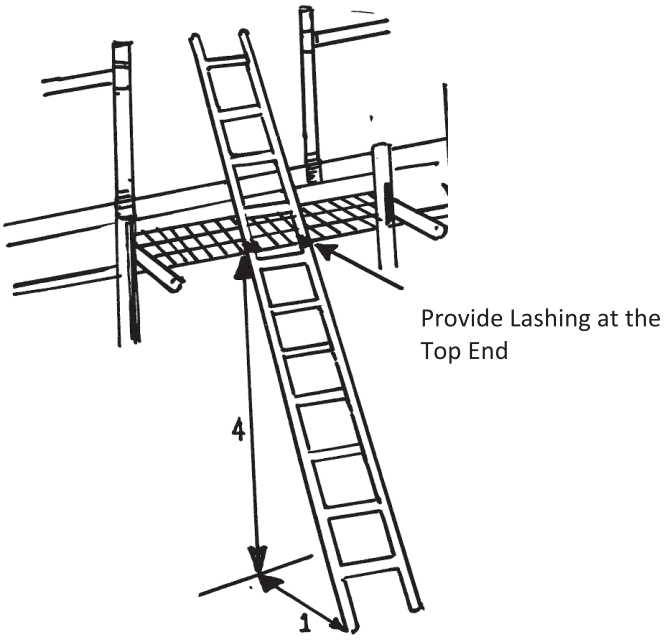
SCAFFOLDING AND LADDERS

Scaffolds are temporary structures erected to provide a working platform for the worker.

USE OF LADDERS

Ladders are invariably used in construction sites for non–regular work of short durations. However it is necessary to take utmost care while using the ladders.

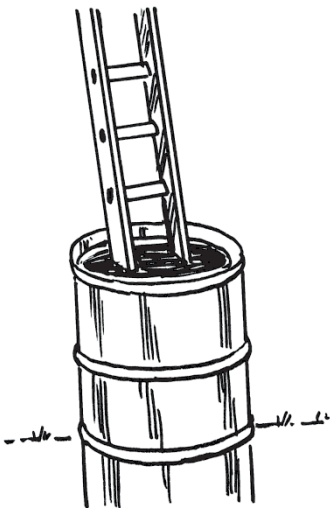
Sl. No	Dos	Don'ts
1	Do use the ladder, when the job is of short duration and can be carried out safely.	Don't use the ladder by standing it on drum, box or other unstable base
2	Ensure that the base of the ladder is staked or buried to prevent slipping.	Never attempt to repair broken ladders
3	Check your footwear is free from excessive mud or grease	Never carry loads during climbing ladders
4	Ensure that you ALWAYS Face the ladder and there is 3 point contact.	Ladder rungs must not be used as unplanned ramps
5	Check whether the ladder is suitable for the job.	Don't use such ladders which is not fit for the job
6	Check whether it is in good shape.	Don't use damage ladder
7	Check that it is secured near the top.	Don't forget to secure the bottom and top end of the ladder
8	Check whether it on a firm base and footing with the ratio of 4 up – 1 out	Don't use ladder on uneven surface
9	Ensure that the ladder is rising at least 1 meter beyond the landing place.	Don't over reach or jump to your landing place from the ladder
10	Always have a firm grip on the ladder and keep a good balance.	Don't climb on ladder with your shoes covered mud, or excess water
11	When using metal or metal-reinforced ladders, make sure there are no electrical hazards in the near vicinity	Don't use metal ladders near electrical cables
12	Keep your hands free and tools in a shoulder bag or belt attachment	Don't climb the ladders with tools in hand



Place Ladder at Proper Angle and secure it



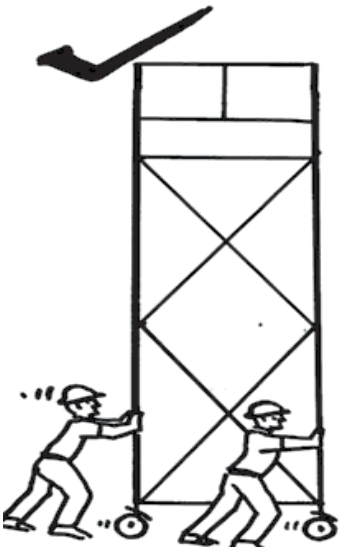
Do not try to over reach



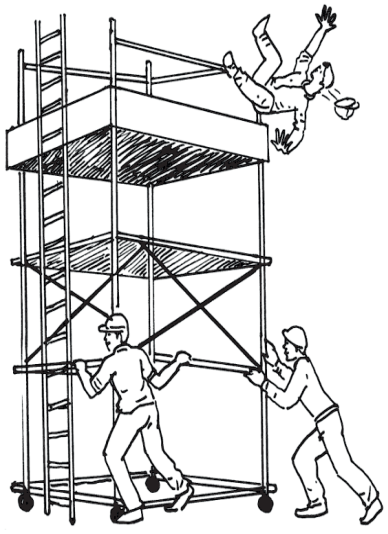
Do not Place Ladder on Drum

MOBILE SCAFFOLD TOWERS

Sl. No	Dos	Don'ts
1	Check all components are in good condition	Don’t use if not in good condition
2	Check brakes and locking devices work correctly	Towers must not be used unless the wheels are locked
3	Check wheels for effective rotation	Don’t use when wheels are jammed
4	Ensure the tower is vertical and square	Don’t use if it is inclined
5	Check the platform is provided with guardrails and toe boards	Don’t use without guardrails and toe boards



Move the scaffold without the person Standing on the Platform



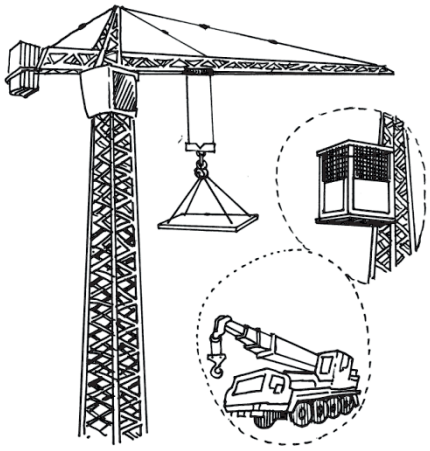
Do not move the scaffold with the person

MOBILE ELEVATED WORK PLATFORMS

Sl. No	Dos	Don'ts
1	Only use on firm level ground	Don’t use on uneven ground
2	Check condition of tyres, guardrails, mid-rails and toe boards, examine for leaking hydraulic fluids	Do not operate without inspection and unless you are trained
3	Look out for overhead obstructions such as power cables, unstable ground, other equipment or personnel near-by	Don’t take chances near electric cables
4	Always wear a safety harness secured to the platform by lanyard.	Don’t forget anchor your safety harness
5	Stay in the basket	Don’t climb on the guardrails
6	Place barricades and warning signs around the planned working radius	Don’t allow people in working radius
7	Keep the boom in the direction of travel and at slow speed	Don’t move the equipment at high speed

Chapter 4

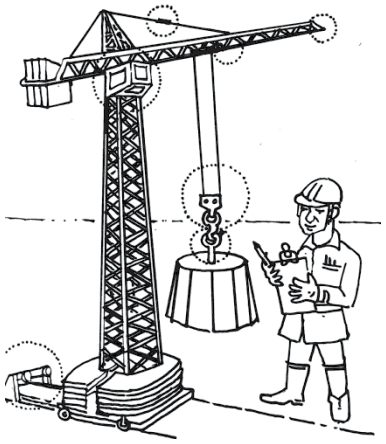
LIFTING EQUIPMENT AND ACCESSORIES





Material Handling is one of the major activities in the construction sites. There are multiple types of material handling and transporting equipments used in the construction sites. It is necessary that the workers are trained and the equipments are maintained, tested and certified to be safe for use.

Sl. No	Dos	Don'ts
1	Check the Lifting Appliance before operation	Do not operate a lifting appliance without checking
2	Always check hook, shackle or chain sling for wear and tear.	Do not use damaged hook, shackle or chain sling.
3	Check the weight and size of the load to be lifted.	Do not use a lifting appliance or lifting tackle unless it has been examined and tested by a competent person.
4	Ensure that correct lifting method is used.	Do not use a lifting appliance if it is not maintained.
5	Follow the safe working instructions	Do not work beneath any suspended load
6	Barricade the operating radius area	Do not allow unauthorized person in the operating radius of the lifting appliance



Cranes Must be Inspected by Competent Person

Material Hoist

Sl. No	Dos	Don'ts
1	Ensure that there is good communication with the operator of a material hoist and the signal man or signaler	Do not operate a material hoist without proper training.
2	All signals should be understood and followed by the operator	Don't allow other people to give signals
3	Use proper Tackles- Hooks, Slings, D-Shackles, etc.	Do not exceed the safe working load limit of a material hoist.
4	Always check for proper balance of load	Do not use a material hoist against unbalanced load
5	Check all safety devices	Do not bypass the safety devices
6	Check all hoists	Do not use a material hoist unless it has been repaired and certified
7	Use hoist only for materials	Do not ride on a material hoist anytime



Over reaching shall be avoided

Chapter 5

EXCAVATIONS AND UNDERGROUND WORKS

An excavation is digging a hole in the ground as the result of removing material.

A trench is an excavation in which the depth exceeds (is bigger than) the width.

Working in trenches and excavations is hazardous to both the workers who work inside them, and to workers on the surface.

The hazards include:

- Cave-ins or collapses that can trap workers.
- Equipment or excavated soil falling on workers (e.g., equipment operated or soil/debris stored too close to the excavation).
- Falling into the trench or excavation.
- Flooding or water accumulation.
- Exposure to a hazardous atmosphere (e.g. gas, vapour, dust, or lack of oxygen).

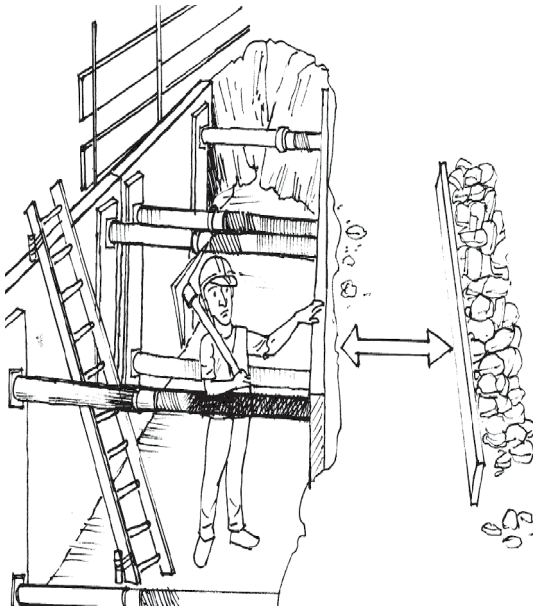
Major Excavation Risks

- The sides of excavation may Cave-in
- The spoil soil may collapse
- Accidental breaking down of underground utility lines
- The person may fall into excavation
- Heavy machinery near the edge can cause a collapse
- Person may get asphyxiation due to lack of oxygen
- Problems in access and egress to the excavation
- Water and Flooding of the excavated area
- Contact with buried service lines such as electrical, natural gas, water, sewage, telecommunications, etc.
- Contact with overhead electrical lines.
- Slips, trips and falls as workers climb on and off equipment, or from inappropriate access and egress methods.
- Being struck by moving machinery, or by falling or flying objects.
- Hazards related to materials handling (e.g., lifting, struck by, crushed between, etc.).

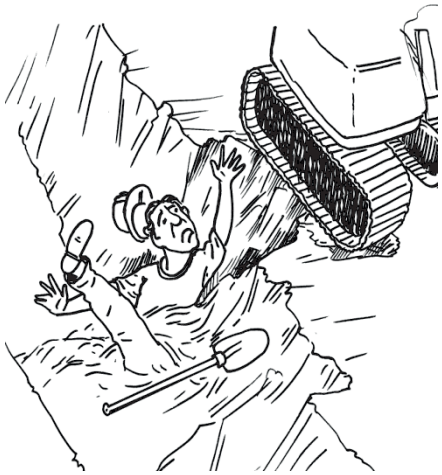
Before beginning excavation:

- Get Excavation Work Permit
- Evaluate underground conditions / positions
- Construct protective systems/ barriers

- Test for low oxygen, hazardous fumes and presence of toxic gases with multi gas meter
- Provide safe in and out access
- Disconnect utilities such as water, gas, electricity, etc
- Determine the safety equipment needed



Ensure Proper Shoring and Barricading



Avoid movement of vehicles near the edges

Sl. No	Dos	Don'ts
1	Always check barriers or barricades around the edges of the excavation.	Don't enter the excavation area without permit.
2	Always check warning signs to warn people of the excavation.	Don't enter the area alone. Always have a co-worker
3	Always check whether traffic is diverted from the excavation area	Don't enter if the area is filled with water or it is flooded.
4	Always check whether flashing amber lights for night-time warning are installed.	Don't let the vehicles pass near the excavation edges
5	Always check whether proper shoring is done	Don't enter the area if shoring is not done
6	Always check whether ladders are available for entry and exit	Don't enter without proper access and egress to the area.

Chapter 6

ELECTRICAL SAFETY

A construction site has high power requirements. Installation of the temporary wiring is done from the main source to the rest of the construction site where it is necessary. Therefore safety preventive measures are required to be taken when working with electrical equipments or near the power cables.



Do not Use Electric Equipments in Wet Condition



Manage the Electric Connections Systematically

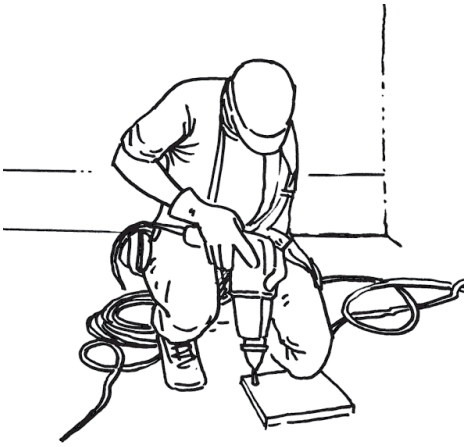
Sl. No	Dos	Don'ts
1	Ensure that proper switchgear is installed	Don't leave the cables lose
2	Check that the power supply cables are insulated and leak proof.	Don't let the overhead cable touch the scaffold or part of building where workers are working.
3	Ensure that the cables are at safe distance from workers	Don't touch cables with wet hands
4	Ensure that all temporary connections are safe and don't create any hazard.	Don't let the material or load touch the over head wiring/ cable
5	Ensure that the electric supply has proper earthing	Don't use hand tools with damage cables
6	Ensure Earth Leakage Circuit Breakers (ELCB) or Residual Current Circuit Breakers (RCCB) are Installed.	Don't overload the power sockets.

Chapter 7

HAND AND POWER TOOLS

Hand and power tools are a common part the work in construction industry. These tools help to easily perform tasks that otherwise would be difficult or impossible task.

Hand tools are tools that are powered manually. The greatest hazards posed by hand tools result from misuse and improper maintenance.



Always Check Your Hand Tools

Sl. No	Dos	Don'ts
1	Check your tools and ensure that it is in good working conditions.	Don’t leave your hand power tools connected to a power supply when not in use.
2	Always check if your tool is right and safe.	Don’t play with hand tools
3	Always keep your tools clean and well maintained.	Don’t carry a tool by its cord or hose.
4	Check the equipment before use, and keep it in proper secured place after it has been used	Don't ever pull the cord or hose to disconnect it from the power supply or plug socket.
5	Do use the right tool for the job.	Don’t use power hand tools with damaged power cable
6	Make sure your body balance while using the tools.	Don’t work in the unbalanced posture
7	Do wear proper protective equipments	Don’t attend the job without the proper protective equipments

Chapter 8

WORKING ABOVE AND UNDER WATER

When working above water and under water in specialized construction activity such as building bridges, dams, etc., the workers are required to be specifically trained.

Safety precautions

- Extreme familiarity with their diving equipment.
- Check working condition of equipment.
- Plan the dive: time, depth, work to be done and stick to the plan.
- Never dive alone. Always have at least one partner that you will stay close to.
- Have a rescue plan in place.
- Know where the nearest decompression chamber is located and how to get help.
- Descend slowly.
- Ascend slowly with the scheduled breaks.
- Monitor air supply regularly during the entire dive.

Sl. No	Dos	Don'ts
1	Check for proper means access/egress and availability of secured gangways, ladders, lifelines, etc	Don't keep unwarranted material, debris , etc to avoid tripping
2	Check that "Safety nets" are provided to arrest fall during work above water	Don't work without safety nets
3	Check that "Safety harness and lines" are used in conjunction ladder access over water	Don't risk your life by not wearing PPE
4	Check that "Site lighting and adequate illumination" is provided.	Don't work in inadequate lighting or darkness
5	Check that "Boats" used for transporting for its fitness.	Don't use the unfit boats
6	Check Provision of lifebuoys with buoyant ropes.	Don't use unfit lifebuoys
7	One of the workers should be trained in CPR and first aid.	Don't carry out the work in absence of first aid trained person
8	Life jackets worn by personnel should have a whistle and light.	Don't work without proper life jackets
9	Do take part in Mock drills	Don't avoid Mock drills

GENERAL SAFETY PRECAUTIONS

- Remain passive in water, allowing lifejacket/survival suit to support you in the best position.
- Do not swim; swimming will greatly increase body heat loss and will reduce survival time considerably (in deep sea).
- In rough sea (weather), protect breathing from “wave slap” by using hands to breathe under by cupping them over nose and mouth.
- Get down to the lowest possible level for jumping into water after wearing the lifejacket. Jumping from heights in excess of 10 meters may cause impact injury.
- Remove false teeth, spectacles and sharp objects from pockets.

Chapter 9

WORKING WITH COMPRESSED GAS CYLINDERS

Compressed gases such as Oxygen, Acetylene, etc are used for various purposes in the construction sites. It is necessary that the workers are trained, and provided knowledge, in safe methods of handling the compressed gas cylinders.

Sl. No	Dos	Don'ts
1	Use a ramp to unload the *gas cylinders*.	Don't drop, hit or impact during handling and transportation.
2	When handling the cylinders its cap and key must be in place.	Don't transport or shift or move cylinder without putting nozzle safety cap.
3	Use separate storage for different cylinders	Don't drag, roll or slide the cylinders while handling, even over short distances.
4	Store empty and full cylinders separately in a dry, cool and ventilated place with chain and lock arrangements.	Don't use cylinders as a roller to shift or move other material.
5	Check that the cylinders are secured and protected from the weather and away from combustible materials.	Don't lift the cylinder manually by holding the nozzle valve wheel; it may cause accidental gas discharge from the cylinders.
6	Check for proper tagging and labeling on gas cylinders.	Don't use a cylinder without a pressure gauge.
7	Label the storage area.	Don't tamper with pressure-relief devices.
8	Use a trolley or hand truck or cart to move or shift the gas cylinders.	Don't expose the cylinder to heat and direct sunlight.
9	Always keep gas cylinder secured, chained, or tied in an upright position.	Don't use oil or grease to lubricate the nozzle or valves of oxygen and other oxidizing gas cylinders.
10	Maintain minimum separation between the flammable gas cylinder and the oxygen or combustible source.	Don't damage the cylinder valves and fittings by using for lifting.
11	The cylinder must be lifted using the cylinder cage or cradle.	Don't strike a cylinder valve with a hammer to open it.
12	Flame arresters must be used	Don't store gas cylinders under direct sunlight.

13	Regularly inspect the pipe, cylinders, and valves for any signs of wear, crack.	Don’t apply force to connect the cylinder that does not fit.
14	The cylinder should be handled by at least two people during localized manual movement.	Don’t transport cylinder on a bicycle or two-wheeler.
15	Remove leaking cylinders from the site immediately to a safe location.	Don’t remove the original hazard identification label.
16	Provide ‘No smoking’ sign near the storage of flammable gas cylinders.	Don’t use a gas cylinder after the hydro test date has expired.

Chapter 10

USE OF EXPLOSIVES

Explosives are used specially for drilling, blasting and demolition work. This is a specialized work and should be performed by specially trained professional.

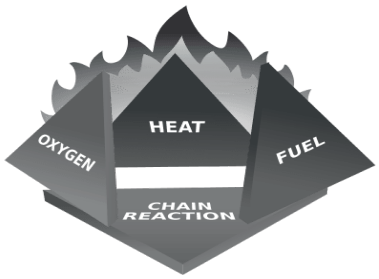
Sl. No	Dos	Don'ts
1	Store explosives only in licensed magazine.	Don’t abandon any explosive material after use at site.
2	Always maintain magazine in good condition.	Don’t store explosives outside magazine.
3	Always keep gangway of 60 cm between stack of explosives boxes and wall.	Don’t use sparking tools.
4	Ensure fencing is provided in the storage area	Never use bale hook during loading/unloading of explosives boxes.
5	Always take precautions to prevent mechanical impact of any hard object with explosives.	Don’t store high explosives and detonators together.
6	Check for signs for ‘danger – explosive’ and ‘turn off radio transmitter’ at the site.	Don’t use misfired explosives.

Chapter 11

FIRE PREVENTION AND CONTROL

Earlier fire was represented by fire triangle with three elements i.e. oxygen, heat and fuel, but it was later identified that another element plays a vital role in existence and spread of fire which is chain reaction. Hence, now fire is defined by the four elements which are

1. Heat
2. Oxygen
3. Fuel
4. Chain reaction



Fire Tetrahedron

Sr.no	Do's	Don't s
1.	Keep escape route clear from obstructions	Do not panic in case of emergency.
2.	Notice the nearest escape route from your location at every time	Do not congest towards one exit only, use alternate exit
3.	Raise alarm in case of fire noticed.	Do not attempt to fight fire before raising alarm
4.	Use the stairs and move towards the Ground Floor	Do not use lifts
5.	Report to the designated Assembly Point	Do not re-enter the building
6.	Follow emergency protocol strictly	Do not over rule emergency protocol
7.	Use a portable fire extinguisher to put off fire	Do not try to fight fire if you don't know how to.
8.	Always check that the safety devices are working	Do not bypass any safety devices and procedures

Chapter 12

DEMOLITION

Demolition is breaking down of building and other structure. It may be to build new structure in place of the existing or because the structure has become unsafe or old.

Hazards

- Collapse of structure
- Fly materials
- Falling materials
- Hit by materials
- Collapse of equipment, machinery, noise, dust, electric shock, explosion, etc.

Demolition Work

Sl. No	Dos	Don'ts
1	Use proper tools and equipments	Don’t start work without permission
2	Wear Personal Protective Equipments	Don’t start work without Personal Protective Equipments
3	Do ensure that all materials are carefully loaded and unloaded to avoid unnecessary noise and dust.	Don’t use noisy equipment/vehicles
4	Ensure equipment is properly maintained.	Do not allow people within close proximity of the demolition site
5	Manage dusty materials with proper dust control system such as water spraying.	Do not burn waste on site.
6	Keep access roads clean, use wheel washers for vehicles leaving the site if required.	Do not deliberately drop tools and materials
7	Cover vehicles containing dusty materials.	Don’t move the dusty materials without covering
8	Always start demolition as per directions of the Supervisors	Don’t work without supervision
9	Always ensure that the structure does not fall on you or your co workers	Don’t allow unauthorized person in the demolition area
10	Ensure that the utilities such as water, gas, oil, etc are shut off.	Don’t leave open lines of utilities such as water, gas, oil, etc.

Chapter 13

PERSONAL PROTECTIVE EQUIPMENTS

Appropriate PPE shall be used whenever it is necessary at the construction site.
Major PPEs include-

- Eye and Face Protection: Safety Glass, Safety Goggles, Welding Shields, Face Shields
- Head Protection: Hard Hat
- Foot and Leg Protection: Leggings, Foot and Shin guards, Safety Shoes
- Hand and Arm Protection: Leather Gloves, Aluminized Gloves, Chemical Resistant Gloves
- Body Protection: Coveralls, Reflecting Vest
- Fall Protection: Fall Restraint, Personal Fall Arrest System
- Hearing Protection: Earplug, Ear caps, Earmuffs
- Respiratory Protection: Particulate Respirators, Gas masks, Airline Respirator, SCBA

Employees should:

- Wear proper PPE
- Attend training sessions on PPE
- Care for, clean and maintain PPE as per specification
- Inform a supervisor of the need to repair or replace PPE

Safety Helmet



IS Standard: IS 2925 : 1984 Specification for industrial safety helmets

Sr.no	Do's	Don't s
1.	Always use safety helmet with chin strap	Don't use a helmet without 'Chin Strap'
2.	Keep clean your safety helmet	Don't keep your helmet dirty with cement, oil, grease, etc
3.	Check for any crack, break etc.	Don't use a helmet with cracks
4.	Keep your Helmet personnel	Don't Share your Safety Helmet.

5.	Inform about any impact on Safety Helmet	Don't use the damaged Safety Helmet
6.	Put your Safety Helmet directly on your head	Don't use cap, handkerchief below your safety helmet
7.	Use all time when working at workplace	Don't remove your safety helmet when in workplace

Safety goggle



IS Standard: IS 5983 : 1980 Specification for Eye protectors

Sr.no	Do's	Don't s
1.	Keep clean your safety goggle	Don't use un-cleaned goggles
2.	Inspect before use for any crack, break etc.	Don't use a safety goggle with cracks
3.	Keep your safety goggle personnel	Don't share your safety goggle.
4.	Use all time when working at workplace	Don't remove your safety goggles when in workplace

Full body harness/Safety belt



IS Standard: IS 3521 : 2021 Part 1 to 8 – Specification for Industrial safety belts and harnesses

Sr.no	Do's	Don't s
1.	Get Training for proper use of full body harness/safety belt	Don't use full body harness/safety belt without training
2.	Keep your full body harness/safety belt clean	Don't use dirty full body harness/safety belt
3.	Check for any damage, breakage, etc. before use	Don't use a safety belts with breakages in lanyard, webbings, etc
4.	Keep your full body harness/safety belt personnel	Don't Share your full body harness/safety belt.
5.	After a fall accident ,discard the full body harness/safety belt	Don't use a damaged full body harness/safety belt

Safety Footwear



IS Standard: IS 15298 Part 1 to 8 : 2016 Specification for industrial safety footwear

Sr.no	Do's	Don't s
1.	Use shoe of right size and fit	Don't use safety shoes which are too tight or loose
2.	Keep your safety shoes clean	Don't use dirty safety shoes
3.	Check for any damage, breakage, etc. before use	Don't use a damaged safety shoes
4.	Keep your safety shoes personnel	Don't share your safety shoes.
5.	Check your shoes for oil, grease	Don't use a oily, slippery safety shoes

Reflective Jacket (High visibility reflective clothing and work wear)



IS Standard: IS 15809:2017-High visibility reflective clothing and work wear user guidelines of high visible jackets

Sr.no	Do's	Don't s
1.	Keep your reflective Jacket clean	Don't use dirty reflective Jacket
2.	Always were reflective Jacket in the entire site area	Don't remove the reflective Jacket
3.	Check for any damage, fade before use	Don't use a damaged, faded reflective Jacket
4.	Keep your reflective Jacket personnel	Don't share your reflective Jacket
5.	Use appropriate reflective jacket according to the work condition	Don't use irrelevant reflective jacket

Chapter 14

CHEMICAL SAFETY

There are two main sources of potential chemical risk directly from the materials used at the construction site. First group is used for the production of composites – these are harmful mineral binders, mainly based on Portland cement with additives. The second group consists of ready construction materials produced from potentially harmful substrates.



Chemical drums

Sl. No	Dos	Don'ts
1.	Always check the label of the containers	Don’t forget to label the Containers
2.	Maintain a log book on day to day basis.	Don’t overfill Containers
3.	Keep a record of the expiration date of chemicals.	Do not overload storage shelves
4.	Check the Safety Data Sheet	Don’t interchange measuring scoops between products
5.	Use Proper Containment	Never mix chemicals together, and never smoke near chemicals
6.	Store Chemical separately	Never inhale the fumes of the products
7.	Use up all product before disposal of container	Don’t store the chemical in direct sunlight
8.	Always store chemical products safely with the containers tightly closed	Don’t leave chemical containers with the lid open unattended
9.	Check safety shower and eye wash is available	Don’t try to siphon the chemical through your mouth
10.	Use correct PPEs while handling chemicals	Don’t use compressed air to transfer chemicals
11.	Check for adequate ventilation in the chemical handling area	Don’t use plastic container to transport and temporarily store flammable chemicals

Chapter 15

EMERGENCY ACTION PLAN

An Emergency Action Plan, or emergency preparedness, is a plan, in the form of a written document that details a workplace's prepared response to an emergency.

Emergency action plan should be known to every worker before the commencement of any works on site.

Sl. No	Dos	Don'ts
1	Check that the evacuation routes un-obstructed	Don't keep materials in the evacuation routes
2	Be alert at your workplace	Don't get panic
3	Check for the emergency phone numbers and communicate respective authorities immediately	Don't keep any operations in "Switched ON" condition while leaving the area
4	If alarm raised for emergency, communicate others about the situations	Don't spread any false/ wrong messages
5	Rush to your designated assembly area and assist ther escue team in tracing the missing person	Don't go anywhere except to your designated assembly area after escaping from an emergency scene
6	Do stay calm	Don't have long conversations
7	Do follow the directions of safety / officials and rescue team	Don't make assumptions

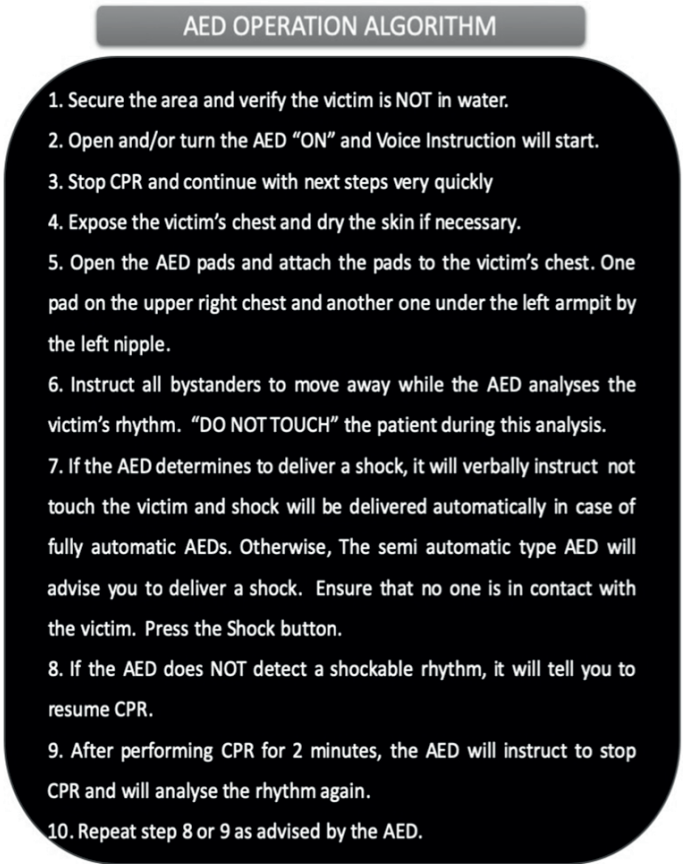
Chapter 16

FIRST AID

Sl. No	Dos	Don'ts
1	Always be calm and quiet during health emergency	Don’t panic and create panic situation
2	Dial 102, call the ambulance / emergency services	Don’t remove deeply stuck objects
3	Look your surroundings and check the scene for danger before you provide help	Don’t rub an injured eye
4	To treat cuts and scrapes, apply gentle pressure, disinfectant, and bandages	Don’t encourage a person who has ingested poison to vomit
5	To treat sprains, provide rest, apply ice pack and compression and keep the limb elevated	Don’t apply bandage too tight so as to stop blood circulation
6	To treat fractures, keep the fractured area stable and immobilized with suitable splint and sling	Don’t feed any injured person if the person is not fully conscious or in shock
7	To treat burns, determine the burn type and severity. Cool the burn with cool running water for 20 minutes.	Don’t apply ice cubes direct over burn area
8	Cover the wound with loose cloth to prevent infection	Don't apply any gel, ointments, jellies, sprays, first aid creams or butter over burn area
9	Perform cardio pulmonary resuscitation (CPR) if the person stops breathing become unresponsive	Do not apply any compression in the form of tight ligatures in case of snake bite

10	Remember to switch off electric source	Don't approach somebody who is still connected to the electricity source
11	To treat heat exhaustion, rest in a cool place, drink cool fluids, try cooling measures	Don’t lean the head back or lay the person down in case of nose bleeding
12	Always ask for help	Don’t apply heat in case of acute trauma

First Aid



AED: AUTOMATED EXTERNAL

Chapter 17

OCCUPATIONAL HEALTH

Every Construction Site involving hazardous processes should have an Occupational Health Centre- Mobile or Static and should be equipped with:

1. One full time construction medical officer for building or other construction work, employing workers up to one thousand and one additional construction medical officer for every additional one thousand workers or part thereof.
2. The staff, including one nurse, one dresser- cum- compounder, one sweeper- cum-ward boy with each construction medical officer for full work hours.
3. The occupational health centre with a floor area of minimum fifteen square meters constituting two rooms with smooth walls and impervious service, adequately illuminated and ventilated.
4. Adequate equipment for day to day treatment.
5. Necessary equipment to manage any medical emergency.





कारखाना सलाह सेवा एवं श्रम संस्थान महानिदेशालय, केंद्रीय श्रम संस्थान
Directorate General Factory Advice Service & Labour Institutes
श्रम एवं रोज़गार मंत्रालय, भारत सरकार
Ministry of Labour & Employment, Government of India
सायन, मुंबई 400 022, भारत
Sion, Mumbai 400 022, India
Website: www.dgfasli.gov.in